

**REMARKS/ARGUMENTS**

Reconsideration of the above application in view of the above amendments and the below remarks is requested. Claim 1 has been amended to further define the invention and claims 2, 9, 10, 12, and 16 have been canceled. Support for the amendment in claim 1 is found on page 8 (middle) to page 9 (middle).

In the Office Action, the Patent Office rejected claims 1 and 8 under 35 U.S.C. § 102(e) as allegedly being anticipated by Wanat et al (US 2003/0194636); rejected claims 1 to 5, 7, 9 to 11, and 16 to 19 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Iwanaga et al (US 5962180) in view of Kawata et al (US 5912102); and rejected claims 6 and 20 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Iwanaga et al (US 5962180) in view of Kawata et al (US 5912102) further in view of Nitta et al (US 2002/0045130). Claims 12 to 15 appear not to have been rejected or objected to by the Patent Office. These rejections are traversed.

With regard to the rejection of claims 1 and 8 as allegedly being anticipated by Wanat et al (US 2003/0194636), Wanat et al do not disclose applicants' invention as now claimed as their polymer do not have the structural unit of formula (I). Wanat et al also state that it either contains a photoactive compound or photoacid generator (see [0015]) whereas applicants' invention has both an acid generating agent and a photosensitizing agent containing a quinonediazide group.

The Patent Office is attempting to establish anticipation of claims 1 and 8 by identifying portions of Wanat et al that disclose individual components of applicants' claimed composition. A claim is anticipated only if each and every element as set forth in

applicants' claims is found expressly or inherently described in a single document. An anticipating document must describe and enable the claimed invention, including all claim limitations, with sufficient clarity and detail to establish that the subject matter already existed in the cited document and that its existence was recognized by persons of ordinary skill in the field of the invention. The dispositive question regarding anticipation is whether one skilled in the art would reasonably understand or infer from the cited document's teaching that every claim limitation was described in that single document. The invention must have been known to the art in the detail of the claim; that is, all of the elements and limitations of the claim must be shown in a single prior reference, arranged as in the claim. A reference which does not satisfy one limitation of a claim does not anticipate.

The Patent Office has not identified a single working embodiment which includes all the features of applicants' claims 1 and 8. In particular, none of the examples in Wanat et al include an alkali-soluble novolak resin, a resin or compound which in itself is insoluble or slightly soluble in alkali, but becomes soluble in alkali by the action of an acid, the resin or compound having a structural unit represented by general formula (I), an acid generating agent, and a photosensitizing agent containing a quinonediazide group.

Furthermore, the Patent Office just lists certain elements from Wanat et al and does not explain how a skilled artisan would come to find that applicants' invention is anticipated by just reciting a list of elements that it picked and chose from Wanat et al. The only manner in which the Patent Office could have picked and chose the elements from Wanat et al was by reference to applicants' claims, which is not permitted. The identical invention must be shown in as complete detail as is contained in applicants' claims and the elements must be arranged as required by the claims. This the Patent Office has not done. The rejection is traversed and withdrawal thereof is requested.

Also in the Office Action, the Patent Office rejected claims 1 to 5, 7, 9 to 11, and 16 to 19 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Iwanaga et al (US 5962180) in view of Kawata et al (US 5912102). The Patent Office listed several components disclosed by Iwanaga et al and admits that Iwanaga et al do not disclose the use of a photosensizing agent comprising a quinonediazide. The Patent Office further states that Kawata et al disclose a phenolic resin and a photosensitive agent composed of a quinonediazide sulfonate. It should be noted that Kawata et al do not disclose radiation sensitive acid generating agents like those of Iwanaga et al (see column 6, lines 33 to 39 of Iwanaga et al). The Patent Office then concludes that it would have been obvious to include a photosensitive agent as disclosed by Kawata et al within the composition of Iwanaga et al.

In order for the Patent Office to establish a *prima facie* case of obviousness, it must show that each and every limitation of the claim is described or suggested by the cited documents. Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. The analysis supporting obviousness should be made explicit and should identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the manner claimed.

In the present situation, there is no fact based reasoned analysis provided by the Patent Office of Iwanaga et al and Kawata et al that would lead a skilled artisan to come to the conclusion to include the photosensitive agent of Kawata et al in Iwanaga et al. No explicit reasons have been proffered by the Patent Office to support the alleged combination of Iwanaga et al and Kawata et al. Since Iwanaga et al disclose the use of

specific radiation sensitive acid generating agents (see column 6, lines 33 to 39) as well as the admission by the Patent Office that Iwanaga et al do not use a photosensitizing agent comprising a quinonediazide, and Kawata et al use a photosensitizing agent comprising a quinonediazide, the Patent Office is using hindsight reconstruction to reject applicants' claims.

The Patent Office cannot use hindsight reconstruction to pick and choose among Iwanaga et al and Kawata et al to deprecate applicants' claimed invention. The suggestion to combine Iwanaga et al and Kawata et al must not be derived by hindsight from knowledge of the invention itself. All limitations of the claimed invention must be taught or suggested by the cited documents to suggest the particular combination. Hindsight is inferred when the specific understanding or principal within the knowledge of one of ordinary skill in the art leading to the modification of the cited documents in order to arrive at applicants' claimed invention has not been explained.

In addition, the analysis in support of an obviousness determination should identify a reason that would have prompted a person of ordinary skill in the art to combine the elements in the manner claimed. All the Patent Office has done is provide a conclusory statement without any explanation to support the combination of Iwanaga et al K and Kawata et al.

Iwanaga et al mention that other additives could be added to its composition, but there is no suggestion that those additives include quinonediazide sulfonate materials of Iwanaga et al. Iwanaga et al mention five different types of radiation sensitive acid-generating agents (see column 6, lines 33 to 39), none of which are remotely related to a photosensitizing agent containing a quinonediazide group. Iwanaga et al even show an example with two different radiation sensitive acid-generating agents (Ex. 11 in Table 3),

but this example showed no better results than Iwanaga et al's examples using one radiation sensitive acid-generating agent. While Kawata et al suggest that it could have another photosensitive agent of a different kind, it has to be known a quinonediazide sulfonate (see column 16, line 63 to column 17, line 3). Kawata et al do not exemplify any combination of two quinonediazide sulfonates. Thus, there is no suggestion or description to add the quinonediazide sulfonate compound of Kawata et al to Iwanaga et al.

The Patent Office's rejection of the claims is based on the knowledge imparted by applicants' claims, not the cited documents. Iwanaga et al do not disclose quinonediazide photosensitive agents and Kawata et al do not disclose the radiation sensitive acid generating agents. A skilled artisan clearly would not combine these documents.

Furthermore, neither Iwanaga et al nor Kawata et al disclose a resin or compound which in itself is insoluble or slightly soluble in alkali, but becomes soluble in alkali by the action of an acid, the resin or compound having a structural unit represented by general formula (I). The Patent Office provides no reason why or how a skilled artisan could alter the resins in either Iwanaga et al or Kawata et al to include a structural unit represented by general formula (I). There is nothing in either Iwanaga et al or Kawata et al, alone or combined, that would teach combining these documents as suggested by the Patent Office, in the absence of applicants' application. The rejection is traversed and withdrawal thereof is requested.

Also in the Office Action, the Patent Office rejected claims 6 and 20 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Iwanaga et al (US 5962180) in view of Kawata et al (US 5912102) further in view of Nitta et al (US 2002/0045130). This rejection is traversed.

Iwanaga et al and Kawata et al are discussed above. Neither Iwanaga et al nor Kawata et al mention the use or the need for using crosslinking materials in their systems. For Iwanaga et al, it needs copolymer (B) and alkyl soluble resin for its etch resistance (See column 5, lines 44 to 50 and column 10, lines 54 to 58, respectively). Kawata et al mention that its photosensitive material is excellent among various properties, including resistance to dry etch (see column 2, lines 28 to 35). Neither Iwanaga et al nor Kawata et al report any data on etch resistance.

Nitta et al have an object to improve the dry etch resistance of its photoresist composition (see [0009]) but do not make any demonstration of improved dry etch. Nitta et al also state that "[w]hile the crosslinking polyvinyl ether compound as the component (C) has an effect to decrease the storage stability of the inventive photoresist composition, this effect of stability decreasing can be compensated by the combined use of the components (D) and (E)." (see [0049]; emphasis added). Thus, Nitta et al teach that the addition of polyvinyl ether compounds has a deleterious effect on its photoresist compositions. As Nitta et al teach away from adding polyvinylether compounds because of deleterious effects, a skilled artisan would not be motivated to combine Nitta et al with Iwanaga et al and Kawata et al as it is an error to find obviousness when documents diverge from and teach away from applicants' invention. Why would a skilled artisan add polyvinylether compounds to its compositions knowing that such compounds have a deleterious effect?

Furthermore, Nitta et al do not disclose a compound containing at least two vinyloxyalkylester groups used by applicants. Nitta et al disclose that their crosslinking polyvinyl ether compound is represented by the formula  $X(-O-CH=CH_2)_n$  (see [0035]-[0036]) where n is an integer of 2, 3, or 4 and X is an n-valent hydrocarbon residue derived from a polyhydric hydrocarbon compound having n hydroxyl groups by eliminating n hydrogen atoms of the hydroxyl groups. The vinyloxyalkylester is not disclosed or

contemplated by Nitta et al and there is no suggestion or teaching to the skilled artisan in Nitta et al to insert a  $-(C=O)-$  moiety between X and O of Nitta et al's polyvinyl ether compound to arrive at applicants' vinyloxyalkylester compound.

In addition, since neither Iwanaga et al nor Kawata et al mention the use of crosslinking materials, the Patent Office is using hindsight reconstruction to reject applicants' claims. The Patent Office cannot use hindsight reconstruction to pick and choose among isolated disclosures in the cited documents to deprecate applicants' claimed invention. The suggestion to combine Iwanaga et al, Kawata et al, and Nitta et al must not be derived by hindsight from knowledge of the invention itself. All limitations of the claimed invention must be taught or suggested by the cited documents to suggest the particular combination. Hindsight is inferred when the specific understanding or principal within the knowledge of one of ordinary skill in the art leading to the modification of the cited documents in order to arrive at applicants' claimed invention has not been explained.

The analysis in support of an obviousness determination should identify a reason that would have prompted a person of ordinary skill in the art to combine the elements in the manner claimed. All the Patent Office has done is provide a conclusory statement without any explanation to support the combination of Iwanaga et al, Kawata et al, and Nitta et al.

The Patent Office has presented no line of reasoning as to why a skilled artisan, when viewing Iwanaga et al, Kawata et al, and Nitta et al, would have found it obvious to selectively pick and choose various elements and/or concepts from the cited documents to arrive at applicants' claimed invention. The Patent Office has done little more than cite Iwanaga et al, Kawata et al, and Nitta et al to show that one or more

elements or some combination thereof, when each is viewed in a vacuum, is known. Applicants' invention is a new combination of elements. To support a conclusion of the claimed combination is directed to obvious subject matter, either Iwanaga et al, Kawata et al, and Nitta et al must expressly or impliedly suggest the claimed combination where the Patent Office must present a convincing line of reasoning as to why a skilled artisan would have found the claimed invention to be obvious in light of the teachings of the cited documents. The mere fact that documents can be combined or modified does not render the resultant combination obvious unless the documents also suggest the desirability of the combination. Furthermore, it is not unreasonable to require the cited documents to provide some reason to alter a known chemical composition in a particular manner to establish the obviousness of a claimed chemical composition. The Patent Office has not presented a convincing line of reasoning (it is not clear whether the Patent Office has provided any line of reasoning) to combine the cited documents. In addition, there is suggestion in the cited documents to combine them to render applicants' invention obvious.

The Patent Office's rejection of the claims is based on the knowledge imparted by applicants' claims, not the cited documents since no crosslinking materials are mentioned in Iwanaga et al or Kawata et al and Nitta et al teach that adding polyvinylether compounds cause deleterious effects, which have to be fixed by the addition of additional materials. A skilled artisan clearly would not combine these documents. The rejection is traversed and withdrawal thereof is requested.

Applicants submit that the concerns of the Patent Office have been addressed. Withdrawal of the rejections and issuance of a Notice of Allowance is respectfully solicited.

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